

## ABSTRACT OF THE DISCLOSURE

A system for efficiently organizing data or information into an associative memory device, such as a ternary content addressable memory (TCAM), for subsequent searching divides the TCAM is divided into a plurality of individual stages that are interconnected in a cascading fashion. The data or information that is to be stored into the TCAM for subsequent searching is initially translated into a first Boolean representation, such as a binary decision diagram (BDD), that is partitioned into a plurality of segments. Each segment defines one or more outputs, and the outputs from one segment define the inputs to the next segment. After partitioning the BDD and identifying the resulting outputs, each BDD segment along with its corresponding outputs is mapped into a particular stage of the TCAM.